

A critical analysis on food preferences in Mid-day lunch for the students and staff of Engineering Colleges in Rural area of West Bengal

Susanta Saha

Assistant Professor, Department of Basic Science and Humanities-Mathematics, Techno Engineering College Banipur,
Habra, 24Pgs(N), West Bengal, 743233.

Abstract: To fulfil the goal of College Management and to consume nutritional food in Mid-day by students and staff of varying ages living at rural area towards better satisfaction with food preferences, an in depth study has been conducted and critical analysis of field data with the reply of relevant developed questionnaire has also been made. The outcome is interesting and that has described and illustrated by available statistical tools by generating frequency table. Study reveals that gender, mother tongue and habitant back ground (rural / urban) has no impact on food choices. Age group between 18-25 years can afford to spend Rs 48/ per day with standard deviation of $Rs \pm 18$ whereas above 25 years can afford to spend Rs 39 / per day with standard deviation of $Rs \pm 11$. Age group between 18-25 years gives weightage 64% priority to nutrition over taste whereas above 25 years gives 54% priority in this respect. However, the preferred food item for lunch has been found to be rice with season available vegetables and the next preferred item is rice noodles. Hence it can be concluded that any rice based item can be served as this item is most preferable food item in Mid-day lunch for all age group living in rural area.

Keywords: Nutritional food, Mid-day lunch, food preferences, questionnaire.

1. INTRODUCTION

To conduct a research on the food preferences in midday lunch of students between the age group 18 to 25 years and those above 25 years belonging to a rural area. The survey was also conducted on student's preference when they were below 14 years of age. The primary data collection method used here was a questionnaire. Here stratified sampling method was used for research. The researcher had divided the population into groups called strata and then a simple random sampling was used from the strata. A total of 100 samples had been analysed. The sample of 100 was divided into two strata each of 50. The sources of data selected for the 1st strata were members of Faculty and staff and 2nd strata comprised students of Techno Engineering college Banipur. The analysis was carried out using SPSS software Version 22 of IBM.

1.1 Variables identified

The following variables were identified by the researcher

- Gender
- Mother Tongue
- Age
- Choice of food in midday lunch
- Background of respondent (Rural or Urban)
- Amount spent every day on Lunch
- Priority of nutrition over taste

1.2 Conversion of Variables in Questionnaire

- Gender
- Mother Tongue
- Age
- Choice of food in midday lunch (Health drinks, Oats, Dahlia, Veg noodles, Rice with Vegetables)
- Background of respondent (Rural or Urban)
- Amount spent every day on Lunch
- Priority of nutrition over taste

The preferred categories are as follows:

- Liquid
- Semisolid
- Dry

Health drinks was kept under Liquid category. Oats and Dahlia fell under Semisolid category, while dry food consists of Rice Noodles and Rice with Vegetables.

2. METHODS OR METHODOLOGY USED

2.1 Appropriate Descriptive Statistics tools used:

The primary data collection method used here was a questionnaire. Here stratified sampling method was used for research. The researcher had divided the population into groups called strata and then a simple random sampling was used from the strata.

The frequency tables used to represent variables were

- Gender
- Mother Tongue
- Age
- Choice of food in midday lunch (Health drinks, Oats, Dahlia, Veg noodles, Rice with Vegetables).
- Background coming from (Rural or Urban)
- Amount spent every day on Lunch
- Priority of nutrition over taste

A frequency table of data containing “amount spent on Lunch per day” has being represented. Statistical Mean, Median, Mode, Skewness, Kurtosis, Variance, Standard deviation, Standard. Error of Skewness had been calculated.

2.2 Appropriate inferential statistics used:

Chi-square Test was used to study the independence of variables for samples of age above 25 years.

- Gender versus Nutrition Preferences over taste
- Mother tongue Versus choice of food
- Gender Versus choice of food
- Background (Urban/Rural) Versus choice of food

Chi-square Test was used to study the independence of variables for samples of age between 18 to 25 years.

- Gender versus Nutrition Preferences over taste
- Mother tongue Versus choice of food
- Gender Versus choice of food
- Background (Urban/Rural) Versus choice of food

Further **paired t-test** was used to compare the means, to test whether the amount spent on mid-day lunch by students between (18 to 25 years) and those above 25 years are equal or not.

The analysis was carried out using SPSS software Version 22 of IBM.

3. RESULTS AND DISCUSSION

3.1 Findings from Age group above 25 years of age

(i) From the Frequency Table -1, food choice of this group was Rice with Vegetables which 74% preferred. The next choice was Veg noodles 16%. Evidently, the least popular food items seemed to be Oats, Dahlia and Health Drinks which contributed 4%, 2% and 4% respectively.

(ii) It was observed from Frequency Table-21, that the choice of food for themselves and their children when they were in the age group less than 14 years was Veg Noodles 50% likings. The next choice was Rice with Vegetables 26% and Health Drinks 18%.

(iii) The amount spent by this age group for their mid-day lunch was Rs 39 with a standard deviation of 11.045 which is analyzed in Table-11. The skewness was found to be -0.286

Signifying that the distribution tends to be normal as the value lies between -3 and 3.

(iv) The preference given by this age group for nutrition is 54% and taste 46%.

3.1.1 Gender Versus Choice of above 25 years age group in food habit.

As observed in Table -15 the chi-square test applies to these variables, Gender and Choice of this age group in choosing the food habit, the p-value was found to be 0.174 which is greater than 5% level of significance. Hence Null hypothesis was accepted to conclude that variables are independent.

3.1.2 Language Versus Choice of above 25 years age group in food habit.

As observed in Table-13, the p-value for chi-square was 0.947 which is greater than 5% level of significance. Hence Null hypothesis was accepted to conclude that variables are independent.

3.1.3 Background (Rural or Urban) Versus Choice of above 25 years age group in food habit.

As observed in Table-19, the p-value for chi-square test applied to these variables and was found to be 0.383 which is greater than 5% level of significance. Hence Null hypothesis was accepted to conclude that variables are independent.

3.1.4 Gender Versus Nutrition value in age group above 25 years

As observed in Table-18, the p-value for chi-square test applies to these variables was found to be 0.114 which is greater than 5% level of significance. Hence Null hypothesis was accepted to conclude that variables are independent.

3. 2.Findings for Age Group between 18 to 25 years

(i)From the Frequency Table -2, that the choice of food for this group was Rice with Vegetables which was liked by 58%.The next choice was Veg noodles as 34% liked it. As seen there was very little liking for Oats Dahlia and Health Drinks with 0%,2% and 6% respectively.

(ii)It was seen from Frequency Table-22, that the choice of food when they were below 14 years, was Veg Noodles as 50% students preferred it. The next choice was Rice with Vegetables 30% and Health drinks with 14% likings. Oats and Dahlia were 2% and 4% respectively.

(iii)The amount spent by this age group in their mid -day lunch was Rs 48 with standard deviation of 17.441 which is analyzed in Table-12. The skewness and kurtosis was found to be 1.059 and 1.646 respectively which signifies that the distribution tends to be normal because the value of skewness and kurtosis lie between -3 and 3.

(iv)The preference given by this age group for Nutrition value is 64% and taste 36% .

3.2.1 Gender Versus Choice of age group between 18 to 25 years in food habit.

As observed in Table -16 for the chi-square test applied to these variables, Gender and Choice of Students of age group between 18 to 25 years in choosing the food habit ,the p-value is found to be 0.270 which is greater than 5% level of significance. Hence Null hypothesis was accepted to conclude that variables are independent.

3.2.2 Language Versus Choice of this age group in food habit.

As seen in Table-14, the p-value for chi-square is 0.767 which is greater than 5% level of significance. . Hence Null hypothesis was accepted to conclude that variables are independent.

3.2.3 Background (Rural or Urban) Vs Choice of this age group in food habit.As seen in Table-20, the p-value for chi-square test applied to these variables is found to be 0.207 which is greater than 5% level of significance. Hence Null hypothesis was accepted to conclude that variables are independent.

3.3. Comparison of Means for Money spend on Lunch for age groups(above 25 years)and (age between 18 to 25 years).

Paired t-test was used for this comparison, the p-value was found to be 0.004 which is less than 0.05 (5% level of significance). Hence we accept the alternate hypothesis and conclude that the means are different.

Table.1.Food choices of Age group above 25 years

| choices | Frequency |
|---------------|-----------|
| Health drink | 2 |
| Oats | 2 |
| Dahlia | 1 |
| Rice Noodles | 8 |
| Rice with veg | 37 |
| Total | 50 |

Table.2. Food choices of Age Group between 18 to 25 years

| choices | Frequency |
|---------------|-----------|
| Health drink | 3 |
| Oats | 0 |
| Dahlia | 1 |
| Rice Noodles | 17 |
| Rice with veg | 29 |
| Total | 50 |

Table.3. Samples of Age group above 25 years coming from Background (Urban/Rural)

| Urban/Rural | Frequency |
|-------------|-----------|
|-------------|-----------|

| | |
|-------|----|
| Urban | 25 |
| Rural | 25 |
| Total | 50 |

Table.4.Samples of Age Group between 18 to 25 years coming from Background(Urban/Rural)

| Urban/Rural | Frequency |
|-------------|-----------|
| Urban | 25 |
| Rural | 25 |
| Total | 50 |

Table.5.Mother Tongue of the samples of Age group between 18 to 25 years

| Language spoken | Frequency |
|-----------------|-----------|
| Bengali | 40 |
| Others | 10 |
| Total | 50 |

Table.6.Mother Tongue of the samples of above 25 years

| Language spoken | Frequency |
|-----------------|-----------|
| Bengali | 48 |
| Others | 2 |
| Total | 50 |

Table.7.Choice between Nutrition and Taste of Age group above 25 years

| Value for Nutrition/Taste | Frequency |
|---------------------------|-----------|
| Nutrition | 27 |
| Taste | 23 |
| Total | 50 |

Table.8.Choice between Nutrition and Taste of Age group between 18 to 25 years

| Value for Nutrition/Taste | Frequency |
|---------------------------|-----------|
| Nutrition | 32 |
| Taste | 18 |
| Total | 50 |

Table.9.Gender of the samples taken for Age group between 18 to 25 years

| Gender | Frequency |
|--------|-----------|
| Male | 35 |
| Female | 15 |
| Total | 50 |

Table.10. Gender of the samples taken for Age above 25 years

| Gender | Frequency |
|--------|-----------|
| Male | 41 |
| Female | 9 |
| Total | 50 |

Table.11. Mean, Standard Deviation, Variance, Skewness of the Amount spend by the Age group above 25 years in Lunch.

| Measures | Amount in Rupees |
|------------------------|------------------|
| Mean | 38.80 |
| Std. Deviation | 11.045 |
| Variance | 122.000 |
| Skewness | -.286 |
| Std. Error of Skewness | .337 |

Table.12. Mean, Standard Deviation, Variance, Skewness of the Amount spend by the Age group between 18 to 25 years in Lunch.

| Measures | Amount in Rupees |
|------------------------|------------------|
| Mean | 48.16 |
| Std. Deviation | 17.44 |
| Variance | 304.178 |
| Skewness | 1.059 |
| Std. Error of Skewness | .337 |

Table.13. Crosstable of Choice in food versus Mother Tongue for Age above 25 years

| Gender | Nutrition | Taste | Total |
|--------|-----------|-------|-------|
| Male | 20 | 21 | 41 |
| Female | 7 | 2 | 9 |
| Total | 27 | 23 | 50 |

Table.14. Crosstable of Choice in food versus Mother Tongue for Age between 18 to 25 years

| Language spoken | Health drink | Oats | Dahlia | Rice Noodles | Rice with veg |
|-----------------|--------------|------|--------|--------------|---------------|
| Bengali | 3 | 0 | 1 | 13 | 23 |
| Others | 0 | 0 | 0 | 4 | 6 |
| Total | 3 | 0 | 1 | 17 | 29 |

Table.15. Cross table of Choice in food versus Gender for Age above 25 years

| Gender | Health drink | Oats | Dahlia | Rice Noodles | Rice with veg |
|--------|--------------|------|--------|--------------|---------------|
| Male | 1 | 1 | 1 | 5 | 33 |
| Female | 1 | 1 | 0 | 3 | 4 |
| Total | 2 | 2 | 1 | 8 | 37 |

Table.16. Cross table of Choice in food versus Gender for Age between 18 to 25 years

| Gender | Health drink | Oats | Dahlia | Rice Noodles | Rice with veg |
|--------|--------------|------|--------|--------------|---------------|
| Male | 3 | 0 | 0 | 11 | 21 |
| Female | 0 | 0 | 1 | 6 | 8 |
| Total | 3 | 0 | 1 | 17 | 29 |

Table.17. Cross table of Nutrition preferences versus Gender for Age between 18 to 25 years

| Gender | Nutrition | Taste | Total |
|--------|-----------|-------|-------|
| Male | 22 | 13 | 35 |
| Female | 10 | 5 | 15 |
| Total | 32 | 18 | 50 |

Table.18. Cross table of Nutrition preferences versus Gender for Age above 25 years

| Language spoken | Health drink | Oats | Dahlia | Rice Noodles | Rice with veg |
|-----------------|--------------|------|--------|--------------|---------------|
| Bengali | 2 | 2 | 1 | 8 | 35 |
| others | 0 | 0 | 0 | 0 | 2 |
| Total | 2 | 2 | 1 | 8 | 37 |

Table.19. Cross table of Background (Urban/Rural) versus Choice in food preferences for Age above 25 years

| Gender | Health drink | Oats | Dahlia | Rice Noodles | Rice with veg |
|--------|--------------|------|--------|--------------|---------------|
| Rural | 1 | 0 | 0 | 3 | 21 |
| Urban | 1 | 2 | 1 | 5 | 16 |
| Total | 2 | 2 | 1 | 8 | 37 |

Table.20. Cross table of Background (Urban/Rural) versus Choice in food preferences for Age between 18 to 25 years

| Gender | Health drink | Oats | Dahlia | Rice Noodles | Rice with veg |
|--------|--------------|------|--------|--------------|---------------|
| Rural | 0 | 0 | 1 | 10 | 14 |
| Urban | 3 | 0 | 0 | 7 | 15 |
| Total | 3 | 0 | 1 | 17 | 29 |

Table.21. Food choices of Age group above 25 years when they were less than 14 years of age

| choices | Frequency |
|---------------|-----------|
| Health drink | 9 |
| Oats | 1 |
| Dahlia | 2 |
| Rice Noodles | 25 |
| Rice with veg | 13 |
| Total | 50 |

Table.22. Food choices of Age group between 18 to 25 years when they were less than 14 years of age

| choices | Frequency |
|---------------|-----------|
| Health drink | 7 |
| Oats | 1 |
| Dahlia | 2 |
| Rice Noodles | 25 |
| Rice with veg | 15 |
| Total | 50 |

CONCLUSION

In both the age group of 18 to 25 years and above 25 years, the preferred food item for lunch has been found to be Rice with Vegetables and the next preferred item is Rice noodles. Hence, it can be concluded that any Rice based item can be served. Oats, Health drinks, Dahlia has found very little popularity, among all age groups, as far as mid-day meal is concerned.

Nevertheless Rice Noodles has been found to be the most preferred food item among school children.

Interestingly Gender, Mother Tongue and Background (Rural / Urban) have been found to have no impact on food choices offered to them.

The average money that the age group above 25 years can spend on mid-day lunch is Rs 39 with a variation of \pm Rs11. Whereas the other group age 18 to 25 years can afford to spend Rs 48 with Standard deviation Rs \pm 18.

The age group above 25 years has given preference 54% priority to nutritional value over taste and the age group between 18 to 25 years has also given 64% priority to Nutrition over taste.

Thus it can be concluded that both age groups has prioritized nutritional value over taste.

REFERENCES

Journals

1. Hanson, D. and Grimmer, M. (2007), "The mix of qualitative and quantitative research in major marketing journals, 1993-2002", *European Journal of Marketing*, Vol. 41 No. 1/2, pp. 58-70.
2. Adler, L. and Mayer, C. S. (1977), *Managing the Market Research Function*, AMA Monograph No. 5. Chicago: American Marketing Association.
3. Bellenger, D. N. (1979), "The Marketing Manager's View of Marketing Research," *Business Horizons*, 22(June), 59-65.
4. Michael R. Hagerty, (1986) The Cost of Simplifying Preference Models. *Marketing Science* 5(4):298-319.
5. Daniel McFadden, (1986) The Choice Theory Approach to Market Research. *Marketing Science* 5(4):275-297.
6. Adams, Edward F. (1977), "An Investigation of the Influence of Job Level and Functional Specialty on Job Attitudes and Perceptions," *Journal of Applied Psychology*, 62 (June), 335-43.
7. Busch, Paul, and Wilson, David T. (1976), "An Experimental Analysis of a Salesman's Expert and Referent Bases of Social Power in the Buyer-Seller Dyad," *Journal of Marketing Research*, 13 (February), 3-11.
8. Deshpandé, Rohit, and Zaltman, Gerald (1982), "Factors Affecting the Use of Market Research Information: A Path Analysis," *Journal of Marketing Research*, 19 (February), 14-31.
9. Hunt, Shelby D. (1990), "Truth in Marketing Theory and Research," *Journal of Marketing*, 54 (July), 1-15.
10. Weiss, Carol H., and Bucuvalas, Michael J. (1980), *Social Science Research and Decision Making*. New York: Columbia University Press.
11. Sangrem, Susie. (1999). "A survey of Multivariate Methods Useful for Marketing Research." *Quick's Marketing Research Review* (May)
12. Sabena, Patricia. (1999). "10 Trends in Qualitative Research." *Quick's Marketing Research Review* (December)
13. Struhl, Steven. (1999). "In pursuit of Software: Major program you won't want to miss-SPSS 9.0, SYSTAT 8.0, ANSWERTREE2.0 AND DELTAGRAPH4.0" *Quick's Marketing Research Review* (February)
14. Bowers, K Diane. Winter (1998/Spring 1999). "FAQs on Online Research" *Marketing Research*:45-48.
15. Annuncio, Charubala. (1993). "The passions of the mind". *Advertising and Marketing*:77-80

Book

16. N. G. Das, "Statistical Method", M. Das and CO Publishers, Kolkata (2007).
17. C. R. Kothari, "Research Methodology", New Age International (P) Limited Publishers, New Delhi (2007).
18. R. Nargundkar, "Marketing Research", Tata McGraw-Hill Publishing Company Limited, New Delhi (2003).

Websites

19. www.spss.com for details about SPSS software package.